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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/838,084

04/18/2001

Guo-Qiang Lo

IDT-1651

9576

27158

7590

07/20/2004

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EXAMINER

FOURSON III, GEORGE R

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/838,084	Applicant(s) LO ET AL.	
	Examiner George Fourson	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

The finality of the office action mailed 4/21/04 is withdrawn because of the inadvertent omission of rejection of claim 19 and indication that withdrawn claims 5-10 were rejected therein.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4,8-11,18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al '382 in view of Ballantine.

The rejection is maintained as stated in the paper mailed 4/21/04.

Applicant argues that there is no reasonable expectation of success that the rapid thermal oxidation (RTO) step of Ballantine would be operable in forming the sacrificial oxide layer 70a of Cheng et al. However, in view of the disclosure that the thickness of layer 70a is suitably 100-300 angstroms and the thickness of the oxide layer formed by Ballantine is 225-400 angstroms, which overlaps the thickness of oxidized monocrystalline Si material of Cheng et al, one of ordinary skill in the art would have had a reasonable expectation of success that the RTO process of Ballantine would have been suitable in formation of layer 70a of Cheng et al. Applicant argues that Ballantine contains the additional teaching of recessing the nitride. However, the additional teaching does not negate the teaching relied on related to use of RTO to form an oxide layer such as layer 70a. Applicant argues that the wet clean step of Cheng et al removes the conditioned oxynitride layer. However, the remaining portion of oxynitride layer 16 corresponds to the conditioned layer. Note instant paragraph [0030] which indicates that an HF etch to remove the sacrificial oxide is a preferred wet clean step of the instant invention, which is the same step used by Cheng et al to remove the same amount of sacrificial oxide after treating an oxynitride layer with

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the same RTO process as in the instant invention (see claim 4, for example). Therefor, the same results as in the instant invention would be obtained by the process of the combination, i.e. the remaining portion of the oxynitride layer is conditioned as recited and does not react with the wet clean process.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al '382 as applied to claims 1-4,11,18 and 20 above, and further in view of Wolf.

The rejection is maintained as stated in the paper mailed 4/21/04.

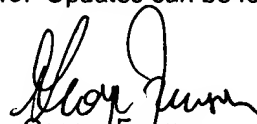
Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al '382 in view of Ballantine as applied to claims 1-4,11,18 and 20 above, and further in view of AAPA.

The rejection is maintained as stated in the paper mailed 7/30/03.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (571) 272-2800. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (571)272-1860. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571)272-1855. The fax number for this group is (571)273-0224 and the customer service number for group 2800 is 571-272-2815. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.

  
George Fourson  
Primary Examiner  
Art Unit 2823

GFourson  
July 15, 2004